Probability Seminar

Title: Non-intersecting Brownian motions with outliers, KPZ fluctuations and random matrices

Speaker: Daniel Remenik (University of Chile)

Date: Wed 2nd December 2020 at 3:00PM

Location: Online

Abstract: A well known result implies that the rescaled maximal height of a system of N non-intersecting Brownian bridges starting and ending at the origin converges, as N goes to infinity, to the Tracy-Widom GOE random variable from random matrix theory. In this talk I will focus on the same question in case where the top m paths start and end at arbitrary locations. I will present several related results about the distribution of the limiting maximal height for this system, which provides a deformation of the Tracy-Widom GOE distribution: it can be expressed through a Fredholm determinant formula and in terms of Painlevé transcendents; it is connected with the fluctuations of models in the KPZ universality class with a particular initial condition; and it is connected with two PDEs, the KdV equation and an equation derived by Bloemendal and Virag for spiked random matrices. Based on joint work with Karl Liechty and Gia Bao Nguyen.

Zoom Link: https://ucd-ie.zoom.us/j/83491228915?pwd=WWV3ZkNGNzVXdGxLRlR0dkdMYUtMZz0

Meeting ID: 834 9122 8915 Passcode: 698437